

IN THE UNITED STATES PATENT AND TRADEMARK OFFICES

IN THE APPLICATION OF:

W. PRESTON BARNES ET AL.

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EXAMINER: V. RONESI

FILED: 09/25/2003

GROUP ART UNIT: 1714

TITLE: LOW ASH STATIONARY GAS ENGINE LUBRICANT

Wickliffe, Ohio

Dated: April 5, 2007

Hon. Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

37 C.F.R. 1.132 DECLARATION

I, Virginia Carrick declare as follows:

I received a Bachelor of Science degree with a major in chemistry in 1986 from John Carroll University. I have been employed by The Lubrizol Corporation since 1987 as a chemist. Since 1992 I have been responsible for formulating lubricants for various engines including stationary gas, heavy duty diesel, compressed natural gas and 4 stroke motorcycle engines. I am one of the inventors in the above-mentioned application, and I am familiar with the references which were used in the rejection thereof.

I certify that this correspondence is being submitted electronically via EFS with the Commissioner for Patents, U.S. Patent & Trademark Office, P.O. Box 1450, Alexandria, Virginia 22313-1450 on:	
Date of Deposit	By: <u>Nancy S. Dedek</u> Nancy S. Dedek

Upon detailed review of the data in my previous declaration, dated August 21, 2006, I have discovered the information regarding the Total Base Number (TBN) of the detergents found in Tables 1 and 2 is not reported correctly. The TBN values for the detergents in Tables 1 and 2 were calculated on an oil containing basis, that is, the detergents listed in both Tables 1 and 2 contain diluent mineral oil. The diluent mineral oil in the detergent impacts the calculation of the TBN. The TBN of the respective detergents should have been reported on an oil free basis.

For clarification, the TBN of the detergent indicates its acid neutralizing ability and is expressed as mg KOH/gm of additive. To calculate the TBN of a detergent on an oil-free basis, one must take the reported TBN of the oil-diluted detergent and divide by the percent active chemical. The percent active chemical is defined as 100% minus % mineral diluent oil in the detergent. For example, the high TBN Ca sulfonate found in Table 1 and 2 has a 300 TBN on a mineral oil-diluted basis. The present high TBN Ca sulfonate contains 42% diluent mineral oil. Therefore, it contains 58% active chemical. So the TBN of the present high TBN Ca sulfonate on an oil free basis is: $300/0.58 = 517$.

For convenience, Tables 1 and 2 of my previous declaration is reproduced below. The TBN values for the detergents in both Tables are now reported on an oil free basis.

Table 1: Palazzotto et al. Comparative Sample A

6,642,191	Sample A1	Sample A2	Sample A3	Sample A4	Sample A5	Sample A6
Group II base oil	100	100	100	100	100	100
Succinimide dispersant A	3.3	3.3	3.3			
Succinimide dispersant B				3.3	3.3	3.3
Low TBN Ca sulfonate detergent (TBN = 32)	3.4			3.4		
High TBN Ca sulfonate detergent (TBN = 517)		3.4			3.4	
High TBN Ca phenate detergent (TBN = 418)			3.4			3.4
zinc dithiophosphate	0.38	0.38	0.38	0.38	0.38	0.38
3,5-di-t-butyl 4-hydroxy phenol propionate antioxidant	0.91	0.91	0.91	0.91	0.91	0.91
foam inhibitor	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Percent Ash*	0.4	1.4	1.1	0.4	1.4	1.1
Panel Coker Deposit Test, Universal Rating (higher is better)	90	78	45	94	70	43

Note: Except for the Panel Coker results all values are presented in weight percent. Additionally, all the above components/ingredients contain conventional amounts of diluent oil.

Note: Succinimide dispersant A is a low molecular weight succinimide dispersant containing a condensed amine.

Note: Succinimide dispersant B is a high molecular weight succinimide dispersant.

*Note: Percent Ash is measured on the finished lubricating oil of Sample A1-A6.

Table 2:

	Example 1(a)	Example 1(b)
Group II base oil	100	100
Succinimide dispersant A	4.24	4.24
Low TBN Ca sulfonate detergent (TBN = 32)	2	
High TBN Ca sulfonate detergent (TBN = 517)		0.42
ashless antiwear	0.50	0.50
3,5-di-t-butyl 4-hydroxy phenol propionate antioxidant	1	1
Foam inhibitor	0.007	0.007
Percent Ash	0.17	0.17
Panel Coker Deposit Test, Universal Rating (higher is better)	92	61

Note: Except for the Panel Coker results all values are presented in weight percent. Additionally, all the above components/ingredients contain conventional amounts of diluent oil. Note: Succinimide dispersant A is a low molecular weight succinimide dispersant containing a condensed amine.

Note: ashless antiwear agent is TPP (tri-phenyl phosphite)

Note: Example 1(a) is an example of the present invention.

*Note: Percent Ash is measured on the finished lubricating oil of Examples 1(a) and 1(b).

For additional clarification, Table 3 shows the TBN of detergents listed in Table 1 and 2 on an oil free basis and an oil containing basis. Note that the TBN of Low TBN Ca sulfonate detergent was reported in my previous declaration as 10. I have concluded that this was the result of a calculation error and it should have been 16 TBN (oil containing) or 32 TBN (oil free).

Table 3

Component	TBN (Oil Free)	TBN (Oil Containing)
Low TBN Ca sulfonate detergent	32	16
High TBN Ca sulfonate detergent	517	300
High TBN Ca phenate detergent	418	255

In light of the above, my comments made and conclusions drawn in my previous declaration remain unchanged.

I further declare that all statements herein made of my own knowledge are true and all statements herein made on information and belief are believed to be true. I understand that willful false statements and the like are punishable by fine or imprisonment or both (18 U.S.C. 1001) and may jeopardize the validity of this application or any patent issuing thereon.

Virginia Carrick
Virginia Carrick

April 5, 2007
Date

Nancy Dedek
Witness